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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,637	08/23/2006	Caiteng Zhang	2467-2	2258
24106	7590	07/16/2010	EXAMINER	
EGBERT LAW OFFICES			HEINCER, LIAM J	
412 MAIN STREET, 7TH FLOOR				
HOUSTON, TX 77002			ART UNIT	PAPER NUMBER
			1796	
			MAIL DATE	DELIVERY MODE
			07/16/2010	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/590,637	ZHANG, CAITENG	
	<b>Examiner</b>	<b>Art Unit</b>	
	Liam J. Heincer	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 27 April 2010.

2a) This action is **FINAL**.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 42-72 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 42-72 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____ .	6) <input type="checkbox"/> Other: _____ .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 42-72 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Considering Claim 42: Claim 42 contains the newly added limitation “for immobilization of a bio-carrier” in the claim. This original specification contains no support immobilization of a biocarrier and no definition for the term. While the original specification contains support for immobilization of enzymes, there is no support for the metal-polymer chelate immobilizing a bio-carrier.

Claim 1 has been amended to recite a “a biocarrier skeleton” The original specification does not refer to a skeleton or disclose how water, the hydroxyl group containing polymer, and metal salt would react together to form a skeleton.

The range limitations for the hydroxyl group bearing compound and the amino group bearing molecule do not have support in the original specification. Additionally, the ranges have been amended to report to five decimal places. The ranges disclosed in the original specification are never given with an accuracy greater than to two decimal places.

Claim 1 contains the limitation “a mixture of the chelates forming a chain which contains positive and negative polar functional groups”. The original specification provides no support for chain formation or positive or minus polar functional groups.

Considering Claim 51: Claim 51 has broadened the nature of the polymer bridging agent from polyvinylpyrrolidone. The original specification only provides support for the polymer bridging agent as being a monosaccharide or polyvinylpyrrolidone (pg. 8). This is not sufficient to support the broader limitations claimed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 42-72 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Considering Claim 42: Claim 42 claims a solution of metal polymer chelates for immobilization of a biocarrier containing the metal polymer chelate. It is not clear how the biocarrier contains a metal polymer chelate that is also being used to immobilize it. Additionally, the metal polymer chelate is said to contain the biocarrier. This creates a cyclical nature to the claims that leads to an indefinite nature to the claims.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

Claim 1 requires a main skeleton comprising water. It is not clear how water can be part of a polymer skeleton as it is a small molecule. Therefore, the manner in which the water is incorporated into the skeleton is not clear. Thus the scope of the claim is indefinite.

As the scope of the claims cannot be determined at this time, application of prior art cannot be attempted at this time.

#### ***Response to Arguments***

Applicant's arguments filed April 27, 2010 have been fully considered but they are not persuasive.

The applicant has corrected several of the limitations addressed under 35 U.S.C 112 in the previous action. However, several rejections are still outstanding after the amendment. Most importantly the structural limitations claiming the interactions between the components of the claim are not disclosed in the original specification and cause the scope of the claim to be indefinite to the point that an examination cannot be attempted.. These limitations have not been corrected by the new amendments. Should the applicant wish to continue prosecution, they are advised to return to the claim structure as originally filed (where the components are named, but the method of

interaction is not named), with the genus narrowed to distinguish the claims from the art that has been cited during prosecution. This is based on the fact that the interactions are not supported by the original specification, and thus would invoke the written description rejections.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/  
Supervisory Patent Examiner, Art Unit 1796

LJH  
July 14, 2010